Agents of Change:

Impact evaluation of the NAMWEZA (‘Yes, together we can!’) intervention with people living with HIV (PLH) and members of their social networks in Dar es Salaam, Tanzania
Presenter Disclosures

Mary C. Smith Fawzi

No relationships to disclose
Specific aim:

- Evaluate the effectiveness of the *NAMWEZA* intervention among people living with HIV and those in their social networks
What is *NAMWEZA*?

- **NAMWEZA** – Yes, together we can!
  - 10 weekly sessions with people living with HIV who have elected to be *agents of change* in their communities
  - Change Agents (CAs) reach out to their network members (NMs) to discuss a broad range of issues related to HIV prevention
What is *NAMWEZA*?

- Sessions – 3-4 hours in duration
- Highly interactive
- Topics covered broad range of issues
  - Approaches to HIV prevention
  - Enhancing *appreciation* and *respect* for oneself and those in their social networks
  - Discussing relationships and love
  - Fostered *communication* skills
  - **Dreaming** about the future
What is NAMWEZA?

• 10 sessions:
  – Introduction/ setting ground rules and ethics for sessions
  – Love, relationships, and feelings
  – Valuing different perspectives, valuing ourselves, valuing our bodies
  – Happy, healthy, safer sexual relations
  – Developing our assertiveness skills
What is *NAMWEZA*?

- 10 sessions (continued):
  - Deepening and expanding our assertiveness skills
  - Disclosure (Parts 1 and 2)
  - Exploring income generating skills
  - The future
What is \textit{NAMWEZA}?

- Groups included ~ 20 individuals
- Gender/age groups
  - Younger women (\(< 35\) years of age)
  - Younger men (\(< 40\) years)
  - Older women (\(\geq 35\) years)
  - Older men (\(\geq 40\) years)
- Guardian angels!
Tree of life - projecting into the future
Theoretically grounded

• Appreciative inquiry/ positive psychology
• Social cognitive theory
• Theory of gender and power
Methods

• Stepped wedge randomized controlled trial
• Individuals randomly assigned to three chronological ‘steps’
• Intervention phased in over time – everyone received program in the end
• Individuals considered as part of the ‘control’ group before receiving the program, then afterwards they were considered part of the ‘intervention’ group
Methods

Figure 1. Stepped wedge randomized controlled trial design schematic

Step 1

Step 2

Step 3

Time (months)

0 6 12 18

Control period

Active intervention period

Post-intervention period
Study population and recruitment

• Recruitment – HIV care and treatment centers (CTCs) in Dar es Salaam

• Inclusion criteria for CAs:
  – 18 years of age or above
  – Receiving antiretroviral therapy (ART) at the study CTCs for at least 3 months
  – Living in study catchment area (Kinondoni District) and planning to remain there for 2 years or more
  – Willingness to serve as a Change Agent/HIV prevention educator in the community and invite up to 10 members of their social network to participate in baseline and follow-up interviews
  – Complete a baseline interview and attend a reorientation session

• Network members (NMs) had to be invited by a CA and meet the same age, location, and baseline interview criteria
Why Kinondoni district

- Largest resident population in Dar 1.1ml population
- Significant proportion of PLHA in care and treatment are women – making an empowerment agenda appropriate
- Chances that the program, if effective, will have high community impact
Primary outcome measures

- Self-efficacy for safe sex— the *Condom Use Self-Efficacy Scale* was used, having demonstrated good reliability and validity in Ghana (Asante et al., 2010)

- Intimate partner violence (IPV)— based on items derived from the IPV module of the Tanzania Demographic and Health Survey (2011)

- HIV risk behaviors— items derived from the Prevention with Positives study in Tanzania (Kidder et al., 2013)

- Self-esteem— assessed using the *Rosenberg Self-Esteem Scale*, which has demonstrated good internal consistency (ranging from 0.77-0.88) and associations with measures of anxiety and depression (Rosenberg, 1965)

- Self-efficacy— based on the *General Self-Efficacy Scale* that has been adapted for use in a number of contexts and has demonstrated good internal consistency (0.81-0.91) and construct validity (Schwarzer et al., 1997)
Secondary outcome measures

- Depression—*PHQ-9*; cut-off score of 9 or above (Kroenke et al., 2001)

- HIV-related stigma—items derived from the *HIV-Stigma Scale* developed by Berger et al. (2001) and has demonstrated good internal consistency (0.96)

- Social support—assessed using the *Duke University-UNC Functional Social Support Questionnaire* that has been used in prior studies in Tanzania (Broadhead et al., 1988)

- HIV knowledge—items based on the Tanzania Demographic and Health Survey
Statistical analysis

• Intent-to-treat analysis was performed for CAs for primary and secondary outcomes for up to 3 follow-up visits

• Generalized estimating equations used to compare the probability of an ‘event’ for intervention versus control periods

• RR and 95% confidence intervals generated for categorical outcomes

• Group means were compared for intervention and control periods for continuous outcomes

• For NMs, student’s t-test and chi-square tests were used to compare the distribution of outcomes before and after the intervention
## Results

### Sociodemographic characteristics at baseline

<table>
<thead>
<tr>
<th></th>
<th>Step 1 (n=91)</th>
<th>Step 2 (n=183)</th>
<th>Step 3 (n=184)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>11 (12.1%)</td>
<td>30 (16.4%)</td>
<td>34 (18.5%)</td>
<td>0.693</td>
</tr>
<tr>
<td>30-39</td>
<td>45 (49.5%)</td>
<td>81 (44.3%)</td>
<td>85 (46.2%)</td>
<td></td>
</tr>
<tr>
<td>40-49</td>
<td>21 (23.1%)</td>
<td>51 (27.9%)</td>
<td>41 (22.3%)</td>
<td></td>
</tr>
<tr>
<td>&gt;=50</td>
<td>14 (15.4%)</td>
<td>21 (11.5%)</td>
<td>24 (13.0%)</td>
<td></td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married/cohabiting</td>
<td>43 (47.3%)</td>
<td>89 (48.6%)</td>
<td>102 (55.4%)</td>
<td>0.306</td>
</tr>
<tr>
<td>Single/divorced/widowed</td>
<td>48 (52.7%)</td>
<td>94 (51.4%)</td>
<td>82 (44.6%)</td>
<td></td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below primary</td>
<td>7 (7.7%)</td>
<td>7 (3.8%)</td>
<td>16 (8.7%)</td>
<td>0.150</td>
</tr>
<tr>
<td>Completed primary or more</td>
<td>84 (92.3%)</td>
<td>176 (96.2%)</td>
<td>168 (71.3%)</td>
<td></td>
</tr>
<tr>
<td><strong>Employment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>27 (29.7%)</td>
<td>59 (32.2%)</td>
<td>46 (25.0%)</td>
<td>0.304</td>
</tr>
<tr>
<td>Employed/Working at home</td>
<td>64 (70.3%)</td>
<td>124 (67.8%)</td>
<td>138 (75.0%)</td>
<td></td>
</tr>
<tr>
<td><strong>Food insecurity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>18 (19.8%)</td>
<td>31 (16.9%)</td>
<td>40 (21.7%)</td>
<td>0.507</td>
</tr>
<tr>
<td>No</td>
<td>73 (80.2%)</td>
<td>152 (83.1%)</td>
<td>144 (78.3%)</td>
<td></td>
</tr>
</tbody>
</table>
## Results

### Outcome analysis for CAs, Men

<table>
<thead>
<tr>
<th></th>
<th>Control (n=384)</th>
<th>Intervention (n=155)</th>
<th>Estimate (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unprotected sex (%)</td>
<td>30.0%</td>
<td>33.3%</td>
<td>1.12 (0.84, 1.49)</td>
<td>0.43</td>
</tr>
<tr>
<td>Multiple partners (%)</td>
<td>16.2%</td>
<td>25.2%</td>
<td>1.65 (1.15, 2.37)</td>
<td>0.01</td>
</tr>
<tr>
<td>Physical abuse perpetration (%)</td>
<td>9.8%</td>
<td>4.0%</td>
<td>0.54 (0.26, 1.12)</td>
<td>0.10</td>
</tr>
<tr>
<td>Physical abuse victimization (%)</td>
<td>11.2%</td>
<td>6.1%</td>
<td>0.77 (0.40, 1.47)</td>
<td>0.42</td>
</tr>
<tr>
<td>Self-efficacy for safe sex (mean, SD) [range 1-4]</td>
<td>3.4 (0.58)</td>
<td>3.7 (0.51)</td>
<td>0.24 (0.16, 0.33)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>HIV-related stigma (mean, SD) [range 1-5]</td>
<td>2.3 (0.81)</td>
<td>1.9 (0.73)</td>
<td>-0.33 (-0.45, -0.21)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Depressive symptoms (mean, SD) [range 0-3]</td>
<td>0.88 (0.58)</td>
<td>0.76 (0.56)</td>
<td>-0.12 (-0.20, -0.03)</td>
<td>0.009</td>
</tr>
</tbody>
</table>
## Results

### Outcome analysis for CAs, Women

<table>
<thead>
<tr>
<th></th>
<th>Control (n=519)</th>
<th>Intervention (n=199)</th>
<th>Estimate (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unprotected sex (%)</td>
<td>31.5%</td>
<td>28.5%</td>
<td>0.91 (0.67, 1.24)</td>
<td>0.55</td>
</tr>
<tr>
<td>Multiple partners (%)</td>
<td>6.8%</td>
<td>15.2%</td>
<td>2.53 (1.48, 4.35)</td>
<td>0.0007</td>
</tr>
<tr>
<td>Physical abuse perpetration (%)</td>
<td>2.6%</td>
<td>2.9%</td>
<td>1.14 (0.30, 4.25)</td>
<td>0.85</td>
</tr>
<tr>
<td>Physical abuse victimization (%)</td>
<td>23.7%</td>
<td>12.6%</td>
<td>0.60 (0.38, 0.94)</td>
<td>0.02</td>
</tr>
<tr>
<td>Self-efficacy for safe sex (mean, SD) [range 1-4]</td>
<td>3.5 (0.56)</td>
<td>3.7 (0.45)</td>
<td>0.23 (0.15, 0.31)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>HIV-related stigma (mean, SD) [range 1-5]</td>
<td>2.2 (0.83)</td>
<td>1.8 (0.69)</td>
<td>-0.37 (-0.47, -0.26)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Depressive symptoms (mean, SD) [range 0-3]</td>
<td>0.94 (0.60)</td>
<td>0.82 (0.53)</td>
<td>-0.13 (-0.21, -0.05)</td>
<td>0.0009</td>
</tr>
<tr>
<td>Outcome analysis for NMs</td>
<td>Baseline (n=602)</td>
<td>After Intervention (n=376)</td>
<td>Relative change (%)</td>
<td>p-value</td>
</tr>
<tr>
<td>--------------------------</td>
<td>------------------</td>
<td>----------------------------</td>
<td>---------------------</td>
<td>---------</td>
</tr>
<tr>
<td>Unprotected sex (%)</td>
<td>61.7%</td>
<td>58.4%</td>
<td>-5.43</td>
<td>0.40</td>
</tr>
<tr>
<td>Multiple partners (%)</td>
<td>20.9%</td>
<td>17.7%</td>
<td>-15.71</td>
<td>0.29</td>
</tr>
<tr>
<td>Physical abuse perpetration (%)</td>
<td>7.7%</td>
<td>7.2%</td>
<td>-6.39</td>
<td>0.78</td>
</tr>
<tr>
<td>Physical abuse victimization (%)</td>
<td>16.3%</td>
<td>9.6%</td>
<td>-41.40</td>
<td>0.0029</td>
</tr>
<tr>
<td>HIV testing (%)</td>
<td>74.0%</td>
<td>79.3%</td>
<td>7.11</td>
<td>0.06</td>
</tr>
<tr>
<td>If HIV+, visited HIV treatment center (n=89)</td>
<td>71.9%</td>
<td>94.1%</td>
<td>30.89</td>
<td>0.0016</td>
</tr>
<tr>
<td>HIV-related knowledge (mean, SD)</td>
<td>0.78 (0.15)</td>
<td>0.80 (0.14)</td>
<td>2.56</td>
<td>0.0063</td>
</tr>
</tbody>
</table>
Qualitative results

• Use of appreciative inquiry and ability spotting

  – *I liked the approach because it helps you to recognize/understand the abilities you have which you did not know before but through story telling you realize that you are blessed with certain abilities* (participant, older woman)

  – *NAMWEZA program valued us because it recognized our potentials and became close to us. When you are close to someone it means you have appreciated him/her. In that sense I may say that NAMWEZA loved us because we were not forced to join, the training had different people with different backgrounds, but during the training we became familiar with each other* (participant, older woman)
Qualitative results

- Increased confidence in HIV communication and reduction in risk behavior

  - I am thankful because it [NAMWEZA] has helped me. For instance, there was a time my husband would agree to use a condom today and refuse the following day... Now I am confident to ask him to use a condom: “I see you want us to have sex without a condom, I would love for us to use it.” Now he understands me (participant, younger woman)

  - I usually advise my sons to use condoms to prevent themselves from HIV, they should not trust their partners. One day I told my colleagues that they feel shy to take the condoms, but I usually take it for my boys. Once I return from the clinic I place them [condoms] on the TV stand and keep quiet but the following day you won’t find them... laughter! So you know that they took it (participant, older man)
Qualitative results

• Challenges presented by NAMWEZA

- Others think that by attending training they will be photographed and exposed to the media because even my husband cautioned me “just be happy but we might see you in the newspapers.” I told him that I don’t care if that happens but the majority are scared by being exposed by the media (participant, older woman)

- The reimbursement was not enough compared to their daily earning as a result people opted to continue with their usual activities (participant, older man)

- Some people complained that the amount paid to cover transport and time was small but I appreciated being reimbursed for transport and the skills I acquired are for my own benefit and other people too (participant, older man)

- Training was good but the challenge was time to start and end the sessions, because most of us were employed so instead of starting at 2:00 p.m. I suggest we start at 12 noon up to 4:00 p.m. (participant, younger man)
Discussion

• Improvement observed for:
  – Self-efficacy for safe sex
  – Self esteem
  – General self-efficacy
  – Social support
  – Reduced HIV-related stigma
  – Intimate partner violence
  – Physical abuse victimization reduced by 40%
  – HIV testing uptake (HIV-negative network members)
  – Access to HIV treatment (HIV-positive network members)

• Obstacles remained for:
  – Unprotected sex
  – Multiple sexual partners
Discussion

• Other HIV prevention interventions in resource-limited settings also reported varying results
  - *Mano a Mano-Mujer* (Hand to Hand for Women) intervention in Chile observed improvements
    - partner communication about safe sex
    - self-efficacy for HIV prevention
    - No effect on condom use
  - HIV prevention intervention in South Africa with a focus on gender inequality found:
    - Reduced intimate partner violence
    - Enhanced shared decision making
    - No effect on HIV prevention and risk communication
Discussion

- Factors that can impact effectiveness of HIV prevention interventions:
  - Duration of the intervention
  - Degree of fidelity to the intervention
  - Study design
  - Length of time of follow-up
  - Measurement of outcomes
  - Variable impact for different populations
Limitations

- Although RCT design, loss to follow-up may still be an issue, with a rate of 27%.

- Network members loss to follow-up was 38%.

- For network members, only one follow-up interview was feasible, resulting in a pre- versus post-test analysis – confounding.

- Increase in risk of multiple partners may be related to the change in partner within the past six months.

- Social desirability bias may be greater at baseline – HIV risk behaviors may be underestimated.

- Generalizability considerations.
Conclusions

- **NAMWEZA** intervention demonstrated a number of positive outcomes, particularly for reductions in intimate partner violence.

- Network members also showed an increase in access to HIV testing and other HIV-related services.

- Intervention was not effective for HIV risk behaviors – possibly indicating the need to strengthen this aspect of the intervention.

- Demonstrates the importance of performing formal evaluations of HIV prevention and similar behavioral interventions.
Authors and affiliations

• Mary C. Smith Fawzi(1), Hellen Siril(2), Yuanyuan Liu(1), Keith McAdam(3), Donald Ainebyona(4), Elspeth McAdam(3), Magreat Somba(4), Kicki Oljemark(3), Neema Mleli(4), Jeffrey Lienert(1), Irene Andrew(2), Sabina Haberlen(5), Alice Simwinga(6), James Todd(7), Samwel Makongwa(4), Nan Li(8), Sylvia Kaaya(4)

• (1) Harvard Medical School, Boston, MA, USA, (2) Management and Development for Health, Dar es Salaam, Tanzania, (3) Namweza Center, United Kingdom and Sweden, (4) Muhimbili University of Health and Allied Sciences, Dar es Salaam, Tanzania, (5) CTS Global Inc., assigned to the U.S. Centers for Disease Control and Prevention, Dar es Salaam, Tanzania, (6) City of Dar es Salaam, Department of Health, Tanzania, (7) London School of Hygiene and Tropical Medicine, Mwanza, Tanzania, (8) Harvard School of Public Health, Boston, MA, USA
Acknowledgements

• We would like to express our sincere gratitude to the study participants and to staff related to this study as well as at implementing HIV CTCs that made this study possible.
• We wish to make a special acknowledgement for Dr. Gilly Arthur, in memoriam, a central collaborator from the U.S. Centers for Disease Control and Prevention (CDC) in Dar es Salaam, Tanzania.
• This research study was funded by the U.S. Centers for Disease Control and Prevention (CDC) (Grant #: TZ/UG.08.0147).